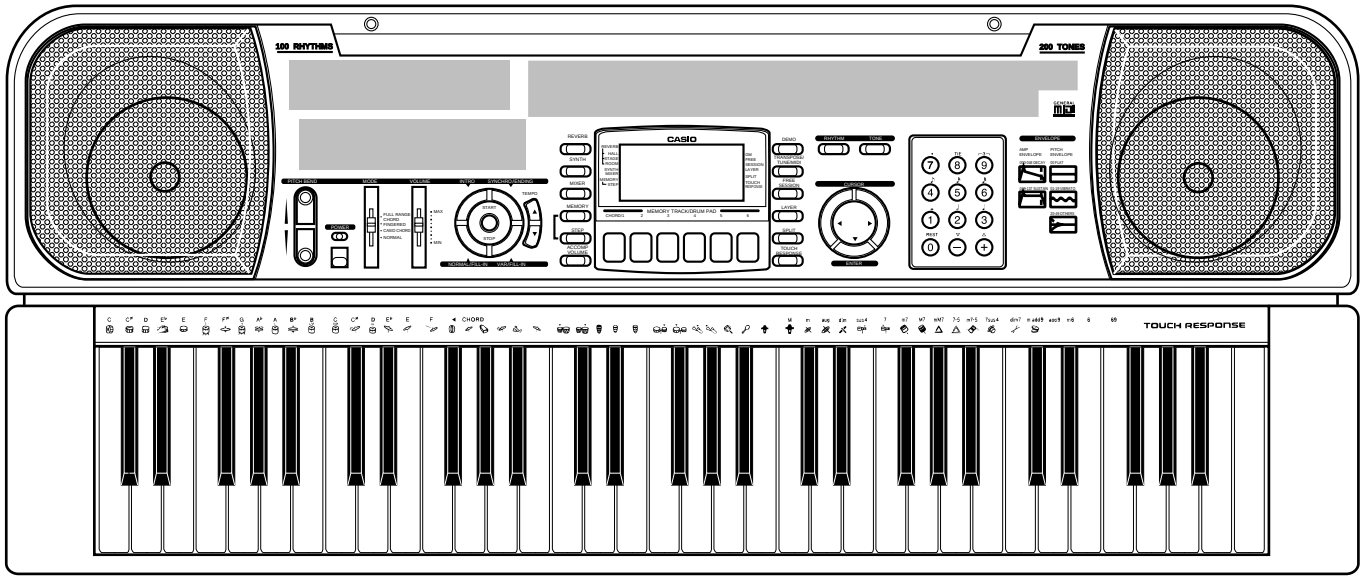
CASIO®

Service Manual

(without price)

CTK-611



CTK-611

MC-Service

INDEX

ELECTRONIC KEYBOARD

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SPECIFICATIONS

GENERAL

Keyboard:	61 standard-size keys, 5 octaves (with touch response on/off)
Drum pads:	6
Tones:	200 (128 General MIDI, 32 synthesized, 8 drum, 32 user); with layer and split
Rhythm instrument tones:	51
Polyphony:	24 notes maximum (12 for certain tones)
Digital effects:	3 reverb types (HALL, STAGE, ROOM)
Auto accompaniment	
Rhythm patterns:	100
Tempo:	Variable (216 steps, ♩ = 40 to 255)
Chords:	3 fingering methods (CASIO CHORD, FINGERED, FULL RANGE CHORD)
Rhythm controller:	START/STOP, INTRO, NORMAL/NORMAL FILL-IN, VARIATION/VARIATION FILL-IN, SYNCHRO/ENDING
Accomp volume:	0 to 127 (128 steps)
Free session	
Number of patterns:	100 (auto-accompaniment in accordance with selected chord progression)
Memory function	
Songs:	2
Recording tracks:	6 (2 through 6 are melody tracks)
Recording methods:	Real-time, step
Memory capacity:	Approximately 5,200 notes (total for two songs)
Edit function:	Equipped
Demo tunes:	2
Synthesizer function	
Parameters:	PCM set, amp envelope set, attack rate, release rate, pitch envelope set, pitch, level, touch sense, pan
Mixer function	
Channels:	16
Parameters:	Program change number, volume, expression, pan, coarse tuning, fine tuning, on/off/solo
MIDI:	16 multi-timbre receive, GM Level 1 standard
Other functions	
Pitch bend range:	12 semitones upwards and downwards
Transpose:	25 steps (–12 semitones to +12 semitones)
Tuning:	Variable (A4 = approximately 440 Hz ± 50 cents)
Terminals	
MIDI terminals:	IN, OUT
Assignable terminal:	Standard jack (sustain, sostenuto, soft, rhythm start/stop)
Headphone/Output terminal:	Stereo standard jack Output Impedance: 120 Ω Output Voltage: 4.5 V (RMS) MAX
Power supply terminal:	9 V DC
Power supply:	Dual power supply system
Batteries:	6 D-size batteries
Battery life:	Approximately 5 hours continuous operation on manganese batteries
AC adaptor:	AD-5
Auto power off:	Turns power off approximately six minutes after last key operation. Enabled under battery power only, can be disabled manually.
Speaker output:	2.5 W + 2.5 W
Power consumption:	9 V ⎓ 7.7 W
Dimensions (HWD):	93.1 × 37.3 × 12.0 cm (36 11/16 × 14 11/16 × 4 3/4 inches)
Weight:	Approximately 5.0 kg (11.0 lbs) (without batteries)

MC-Service

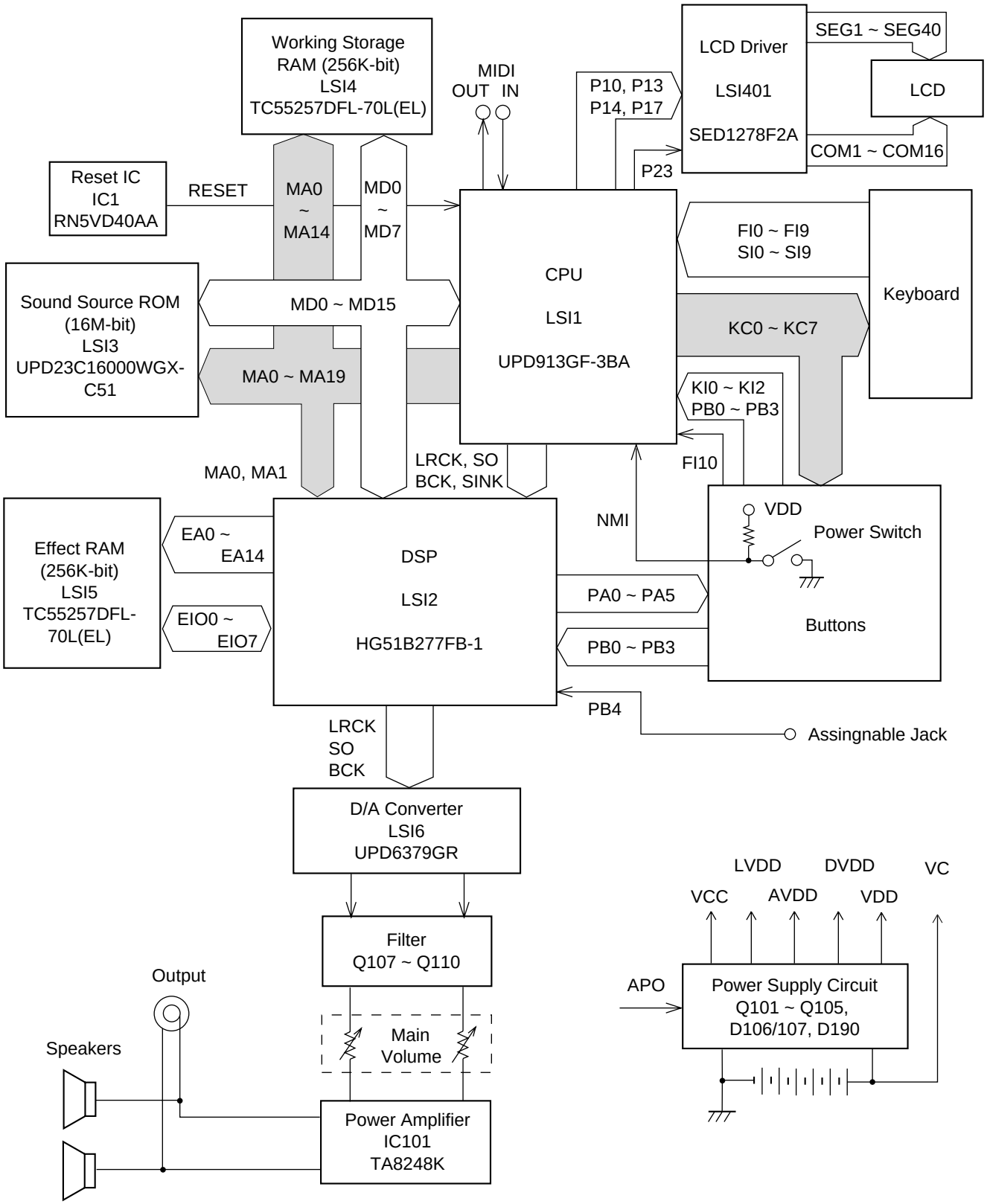
ELECTRICAL

Current drain with 9 V DC:		
No sound output		340 mA ± 20 %
Maximum volume		1012 mA ± 20 %
with 12 keys from C3 to B3 pressed in Square wave tone Volume: maximum, Touch response: maximum Reverb: Hall		
Phone output level (Vrms with 8 Ω load each channel):	L-ch	90 mV ± 20 %
with key C6 pressed in Bassoon tone Volume: maximum, Touch response: maximum Reverb: Hall	R-ch	100 mV ± 20 %
Speaker output level (Vrms with 4 Ω load each channel):	L-ch	1150 mV ± 20 %
with key F5 pressed in Bassoon tone Volume: maximum, Touch response: maximum Reverb: Hall	R-ch	1000 mV ± 20 %
Output level (Vrms with 47k Ω load each channel):	L-ch	1200 mV ± 20 %
with key F5 pressed in Bassoon tone Volume: maximum, Touch response: maximum Reverb: Hall	R-ch	1000 mV ± 20 %
Minimum operating voltage:		6.3 V

About General MIDI

General MIDI standardizes MIDI data for all sound source types, regardless of manufacturer. General MIDI specifies such factors as tone numbering, drum sounds, and available MIDI channels for all sound sources. This standard makes it possible for all MIDI equipment to reproduce the same nuances when playing General MIDI data, regardless of the manufacturer of the sound source.
This keyboard supports General MIDI, so it can be used to play commercially available pre-recorded General MIDI data and General MIDI data send to it from a personal computer.

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

KEY MATRIX

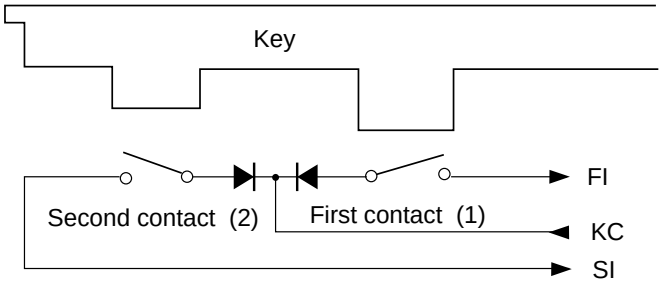
	KC0	KC1	KC2	KC3	KC4	KC	KC6	KC7
FI0	C2 (1)	C#2 (1)	D2 (1)	D#2 (1)	E2 (1)	F2 (1)	F#2 (1)	G2 (1)
SI0	C2(2)	C#2 (2)	D2 (2)	D#2 (2)	E2 (2)	F2 (2)	F#2 (2)	G2 (2)
FI1	G#2 (1)	A2 (1)	A#2 (1)	B2 (1)	C3 (1)	C#3 (1)	D3 (1)	D#3 (1)
SI1	G#2 (2)	A2 (2)	A#2 (2)	B2 (2)	C3 (2)	C#3 (2)	D3 (2)	D#3 (2)
FI2	E3 (1)	F3 (1)	F#3 (1)	G3 (1)	G#3 (1)	A3 (1)	A#3 (1)	B3 (1)
SI2	E3 (2)	F3 (2)	F#3 (2)	G3 (2)	G#3 (2)	A3 (2)	A#3 (2)	B3 (2)
FI3	C4 (1)	C#4 (1)	D4 (1)	D#4 (1)	E4 (1)	F4 (1)	F#4 (1)	G4 (1)
SI3	C4 (2)	C#4 (2)	D4 (2)	D#4 (2)	E4 (2)	F4 (2)	F#4 (2)	G4 (2)
FI4	G#4 (1)	A4 (1)	A#4 (1)	B4 (1)	C5 (1)	C#5 (1)	D5 (1)	D#5 (1)
SI4	G#4 (2)	A4 (2)	#4 (2)	B4 (2)	C5 (2)	C#5 (2)	D5 (2)	D#5 (2)
FI5	E5 (1)	F5 (1)	F#5 (1)	G5 (1)	G#5 (1)	A5 (1)	A#5 (1)	B5 (1)
SI5	E5 (2)	F5 (2)	F#5 (2)	G5 (2)	G#5 (2)	A5 (2)	A#5 (2)	B5 (2)
FI6	C6 (1)	C#6 (1)	D6 (1)	D#6 (1)	E6 (1)	F6 (1)	F#6 (1)	G6 (1)
SI6	C6 (2)	C6# (2)	D6 (2)	D#6 (2)	E6 (2)	F6 (2)	F#6 (2)	G6 (2)
FI7	G#6 (1)	A6 (1)	A#6 (1)	B6 (1)	C7 (1)			
SI7	G#6 (2)	A6 (2)	A#6 (2)	B6 (2)	C7 (2)			

BUTTON MATRIX

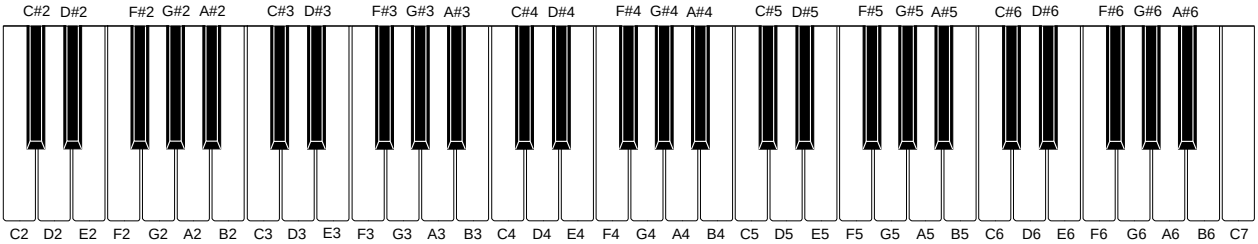
	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
FI10	Drum Pad 3	Drum Pad 1	Pitch Bend ▼	▼ Enter	9	6	+	Tone
KI0	Drum Pad 4	Drum Pad 2	Pitch Bend ▲	Start/ Stop	8	3	—	Rhythm
KI1	Drum Pad 5	Step	Tempo ▼	►	7	2	0	Demo
KI2	Drum Pad 6	Memory	Tempo ▲	◄	4	5	1	Transpose/ Tune/MIDI

	PA0	PA1	PA2	PA3
PB0	Full Range Chord	Intro	Touch Response	Reverb
PB1	Fingered	Normal/ Fill-In	Free Session	Accomp Volume
PB2	Casio Chord	Synchro/ Ending	Layer	Synth
PB3	Normal	Variation/ Fill-In	Split	Mixer

Note: Each key has two contacts,
the first conatct (1) and second contact (2).



NOMENCLATURE OF KEYS



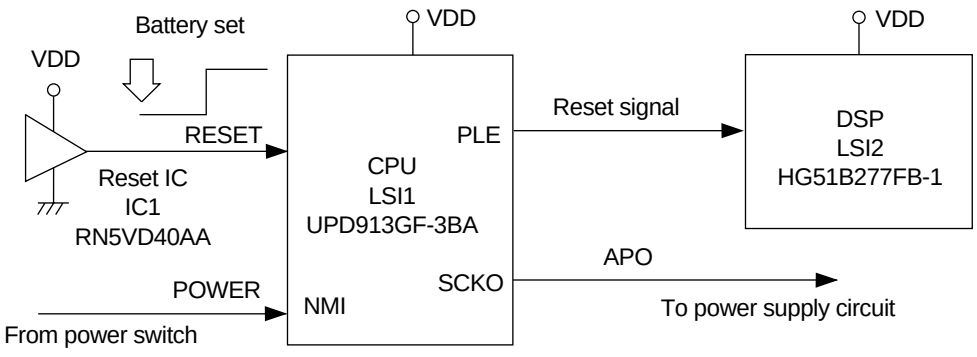
POWER SUPPLY CIRCUIT

The power supply circuit generates five voltages as shown in the following table. VDD voltage is always generated. The others are controlled by APO signal from the CPU.

Name	Voltage	For operation of
VDD	+5 V	CPU, Reset IC, DSP, Sound source ROM, Working storage RAM, Effect RAM
DVDD	+5 V	LCD driver, Power jack, Sustain jack, MIDI jack
AVDD	+5 V	DAC, Filter
LVDD	+5.6 V	LCD dirver
VCC	+9 V	Power amplifier, Pilot lamp

RESET CIRCUIT

When batteries are set or an AC adapter is connected, the reset IC provides a low pulse to the CPU. The CPU then initializes its internal circuit, and clears the working storage RAM.
When the power switch is pressed, the CPU receives a low pulse of POWER signal. The CPU sends APO signal to the power supply circuit, also sends a reset signal to the DSP.



CPU (LSI1: UPD913GF-3BA)

The 16-bit CPU contains a 1k-byte RAM, three 8-bit I/O ports, two timers, a key controller and serial interfaces. The CPU detects key velocity by counting the time between first-key input signal FI and second-key SI from the keyboard. The CPU reads sound data and velocity data from the sound source ROM in accordance with the selected tone; the CPU can read rhythm data simultaneously when a rhythm pattern is selected. Then the CPU provides 16-bit serial sound data to the DSP. The CPU also controls MIDI input/output and stores sequencer data into the working storage RAM.
The following table shows the pin functions of LSI1.

Pin No.	Terminal	In/Out	Function
1	TXD0	Out	MIDI signal output
2	RXD0	In	MIDI signal input
3	SCK0	Out	APO (Auto Power Off) signal output
4, 5	TXD1, RXD2	In/Out	Data bus for the LCD driver
6	SCK1	Out	1 MHZ synchronizing pulse output
7	AVCC	In	DVDD (+5 V) source
8	AN0	In	AC adaptor detection terminal. +5 V when the keyboard is powered by batteries and becomes 0 V to cancel the APO function when AC adaptor is connected.
9	AN1	—	Not used. Connected to ground.
10	AGND	In	Ground (0 V) source
11	BCK	Out	Bit clock output
12	SO	Out	Serial sound data output
13	LRCK	Out	Word clock output
14	GND	In	Ground (0 V) source
15, 16	XLT0, XLT1	In/Out	20 MHz clock input/output
17	VCC	In	+5 V source
18, 19	MD0, MD1	In	Mode selection terminal
20	RSTB	In	Reset signal input
21	NMI	In	Power ON signal input
22	INT/P10	In/Out	Data bus for the LCD driver
23 ~ 30	FI0 ~ FI3 SI0 ~ SI3	In	Terminal for key input signal
31 ~ 38	KC0 ~ KC7	Out	Terminal for key scan signal
39 ~ 46	FI4 ~ FI7 SI4 ~ SI7	In	Terminal for key input signal
47 ~ 50	FI8, FI9 SI8, SI9	—	Not used
51	FI10	In	Terminal for button input signal
52	SI10/P23	Out	Chip enable signal for the LCD driver
53 ~ 55	KI0 ~ KI2	In	Terminal for button input signal
56	MWNB	Out	Write enable signal for the DSP
57 ~ 76	MA0 ~ MA17	Out	Address bus
77	MCSB0	Out	Chip enable signal output for the sound source ROM
78	MCSB1	Out	Not used
79	MCSB2	Out	Chip enable signal output for the DSP

Pin No.	Terminal	In/Out	Function
80	VCC	In	+5 V source
81	GND	In	Ground (0 V) source
82	MRDB	Out	Read enable signal output for the sound source ROM
83 ~ 98	MD0 ~ MD15	In/Out	Data bus
99	PLE	Out	Reset signal output for the DSP
100	P17	In/Out	Data bus for the LCD driver

DIGITAL SIGNAL PROCESSOR (LSI2: HG51B227FB-1)

The DSP receives 16-bit serial sound data output from the CPU and adds the selected effect to the sound data using the effect RAM. Then the DSP provides the sound data to the DAC. The DSP also controls button input/output.
The following table shows the pin functions of LSI2.

Pin No.	Terminal	In/Out	Function
1 ~ 3, 80	PB0 ~ PB3	In	Button input terminals
4	PB4	In	ASSIGNABLE Jack input
5	SO	Out	Serial sound data output for the DAC
6	WCKO	Out	Word clock output for the DAC
7	VDD3	In	+5 V source
8	TEST	—	Not used
9	RESB	In	Reset signal input
10	VSS2	In	Ground (0 V) source
11, 12	XIN, XOUT	In/Out	20 MHz clock input/output
13	WCKI	In	Word clock input from the CPU
14	SI	In	Serial sound data input from the CPU
15	BCKI	In	Bit clock input from the CPU
16	SINC	In	1 MHz synchronizing pulse input
17	VDD2	In	+5 V source
18 ~ 25	IO0 ~ IO7	In/Out	Data bus
26	RCEB	Out	Chip enable signal output for the working storage RAM
27	VSS3	In	Ground (0 V) source
28	AD1	In	Address bus
29	OEB	Out	Output enable signal for working storage RAM
30	WEB	In	Write enable signal
31	VDD3	In	+5 V source
32	CE2	In	Chip enable signal input. High active.
33	AD0	In	Address bus
34	CE1B	In	Chip enable signal input. Low active.
35 ~ 41, 43	EIO0 ~ EIO7	In/Out	Data bus for the effect RAM

Pin No.	Terminal	In/Out	Function
42 , 44, 46 ~ 48, 51 ~ 59, 61	EA0 ~ EA12	Out	Address bus for the effect RAM
45	ECEB	Out	Chip enable signal output for the effect RAM
49	EOEB	Out	Read enable signal output for the effect RAM
50	VSS3	In	Ground (0 V) source
60	EWEB	Out	Write enable signal output for the effect RAM
62, 66, 70, 74, 78	VSS2	In	Ground source
63, 67, 71, 75, 79	VDD2	In	+5 V source
64, 65, 68, 69, 72, 73	PA0 ~ PA5	Out	Button scan signal output
76, 77	PA6/7	Out	Not used

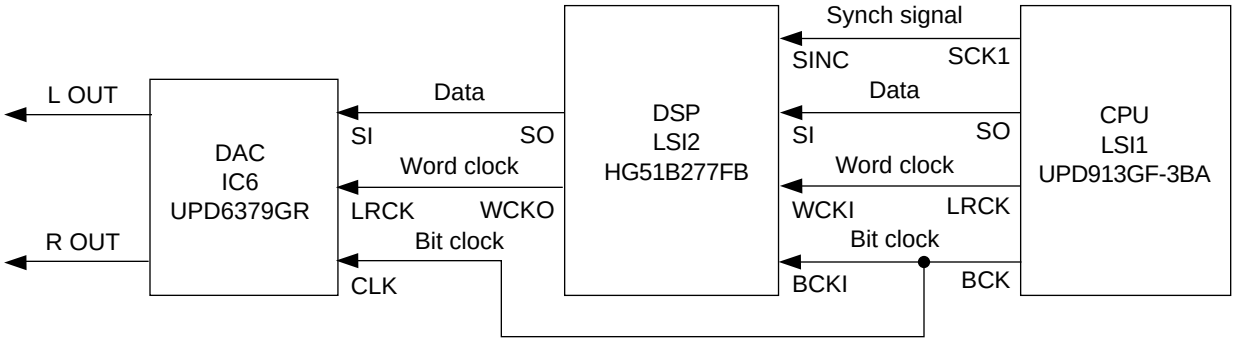
LCD DRIVER (LSI401: SED1278F2A)

The LCD driver can drive a dot matrix LCD having 40 segment and 16 common lines. The LSI contains 240 graphic symbols in the built-in character generator ROM, and stores 80 characters in the built-in display data RAM. In accordance with command from the CPU, the LSI is capable of displaying up to 16 characters simultaneously. The following table shows the pin functions of LSI 401.

Pin No.	Terminal	In/Out	Function
1 ~ 22, 63 ~ 80	SEG1 ~ SEG40	Out	Segment signal output
23	VSS	—	GND (0 V) source
24, 25	OSC1, OSC2	In/Out	Terminals for the built-in clock pulse generator. The external resistor connected determines the oscillation frequency.
26 ~ 30	V1 ~ V5	In	LCD drive voltage input. Those voltages are used for generating the stepped pulse of the LCD drive signals.
31, 32	LP, XCLS	—	Not used
33	VDD	In	DVDD (+5 V) source
34, 35	FR, DO	—	Not used
36	RS	In	Data/command determination terminal. High: data, Low: command
37	R/W	In	Read/write terminal. High: read, Low: write
38	E	In	Chip enable signal. High: enable, the writing is done at fall edge. Low: disenable
39 ~ 42	DB0 ~ DB3	—	Not used. Connected to GND (0 V)
43 ~ 46	DB4 ~ DB7	In/Out	Data bus
47 ~ 62	COM1 ~ COM16	Out	Common signal/output

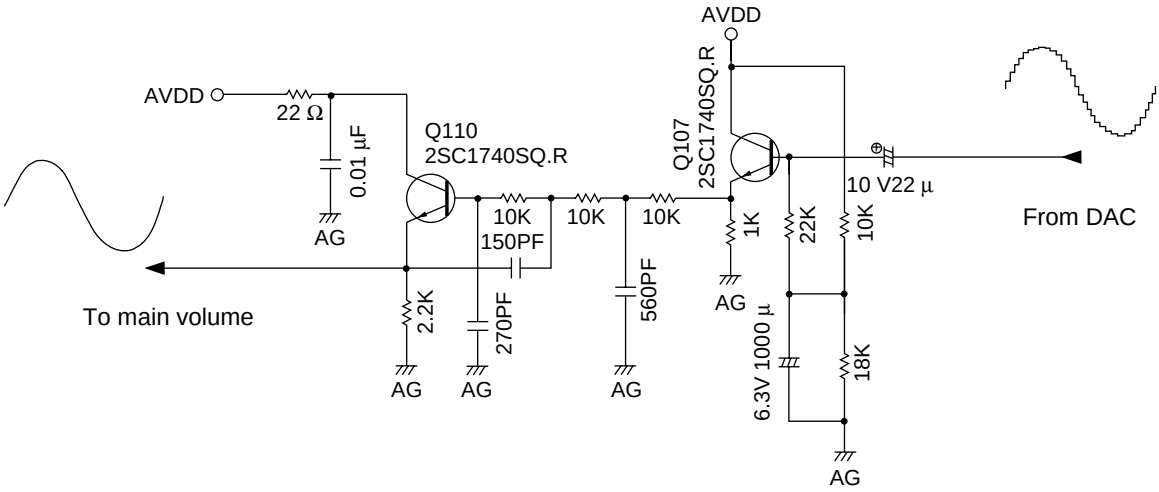
DAC (LSI6: UPD6379GR)

The DAC receives 16-bit serial data output from the DSP. The data contains digital sound data of the melody, chord, bass, and percussion for the right and left channels. The DAC converts the data into analog waveforms and output them to each channel separately.



FILTER BLOCK

Since the sound signals from the DAC are stepped waveforms, the filter block is added to smooth the waveforms.



POWER AMPLIFIER (IC101: TA8248K)

The power amplifier is a two-channel amplifier with standby switch.
The following table shows the pin function of IC101.

Pin No.	Terminal	In/Out	Function
1	NC	—	Not used
2	B.S.2	—	Terminal for a bootstrap capacitor
3	OUT2	Out	Channel 2 output
4	VCC	In	+9 V source
5	OUT1	Out	Channel 1 output
6	B.S.1	—	Terminal for a bootstrap capacitor
7	Power GND	In	Ground (0 V) source
8	Stand by	In	Power control signal input. 0 V: Off, +9 V: On
9	DC	—	Terminal for a decoupling capacitor
10	NF1	In	Negative feedback input
11	IN1	In	Channel 1 input
12	IN2	In	Channel 2 input
13	NF2	In	Negative feedback input
14, 15	Pre GND	In	Ground (0 V) source

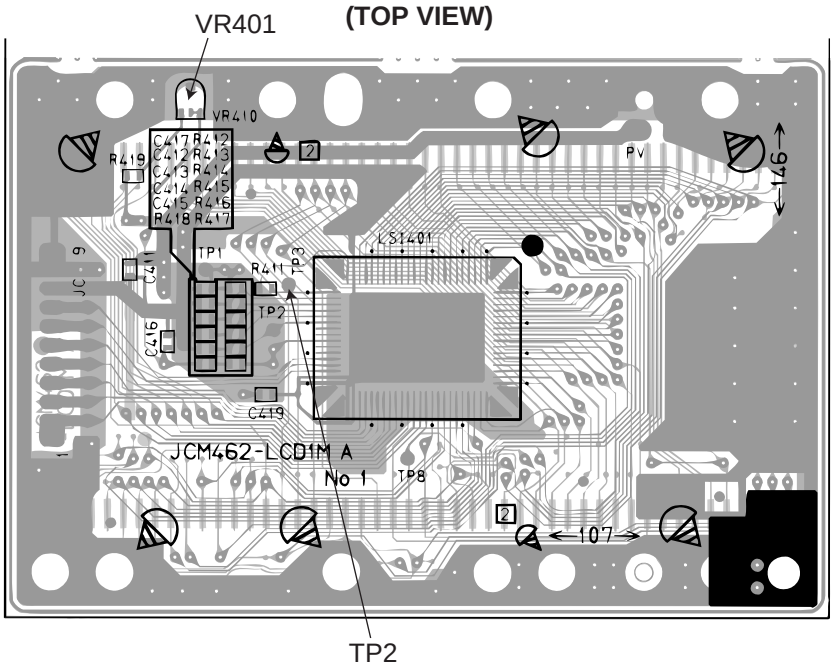
ADJUSTMENT

DISPLAY PCB

1) Items to be adjusted:

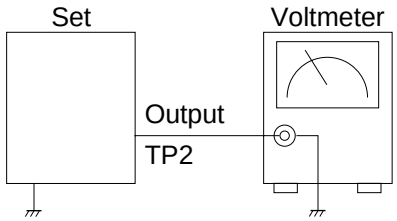
Item	Measuring Instrument
Vop voltage setting	Voltmeter

2) Adjustment and Test Point Locations

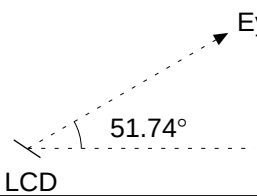


3) Equipment connection/Procedure

Vop voltage setting

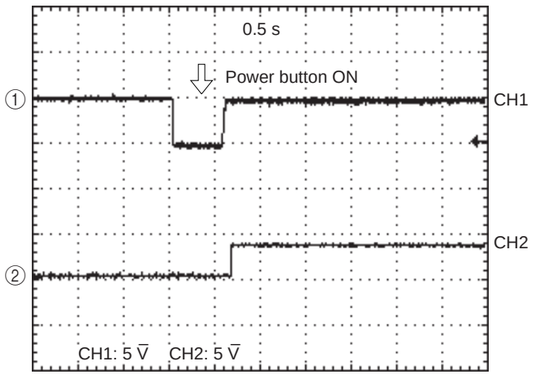


Input Connection	Input Point	Input Signal	Adjust	Output Connection	Output Point	Adjust for
————	———	———	VR410	Voltmeter	TP2	Adjust for 4.3 to 4.4 V reading on voltmeter under the temparature 20 to 25 °C. Make fine adjustment according to the following instruction.

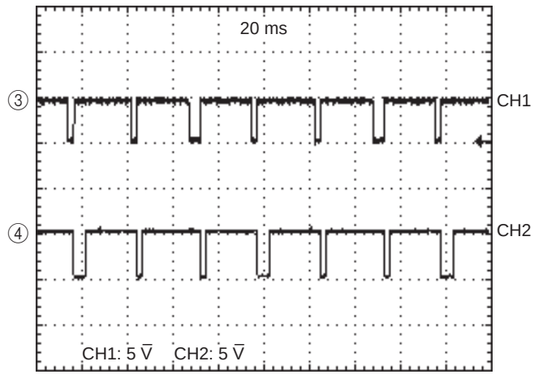


Watching the LCD at a 51.74° angle to the horizontal, adjust Vop voltage so that unenergized segments are seen dimly.

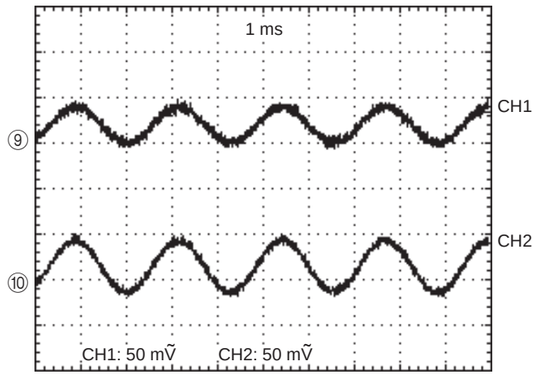
MAJOR WAVEFORMS



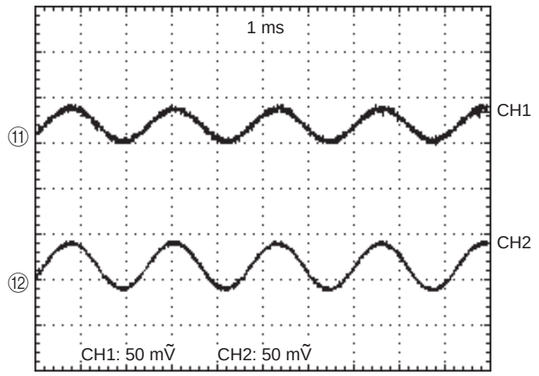
① NMI signal
JE connector pin 16
② APO signal
JD connector pin 9



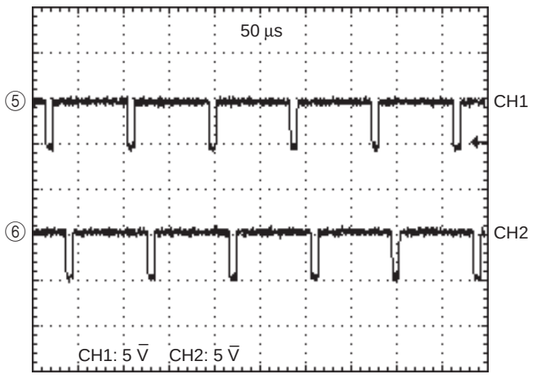
③ Button scan signal PA0
JD connector pin 14
④ Button scan signal PA1
JE connector pin 14



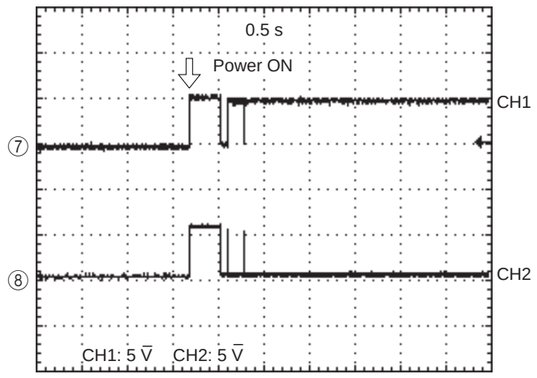
⑨ DAC output (L-ch)
JD connector pin 6
⑩ Dac output (R-ch)
JD connector pin 7



⑪ Sound signal (L-ch)
JF connector pin 2
⑫ Sound signal (R-ch)
JF connector pin 1



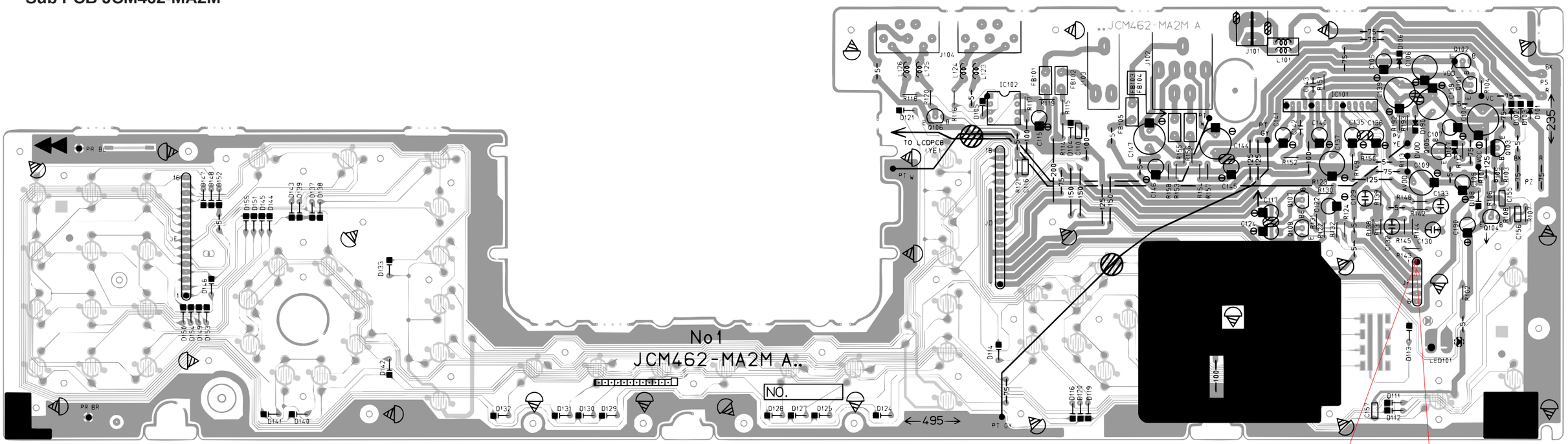
⑤ Key scan signal KC0
JB connector pin 1
⑥ Key scan signal KC1
JB connector pin 2



⑦ RS signal PA4
JC connector pin 7
⑧ R/W signal PA5
JC connector pin 6

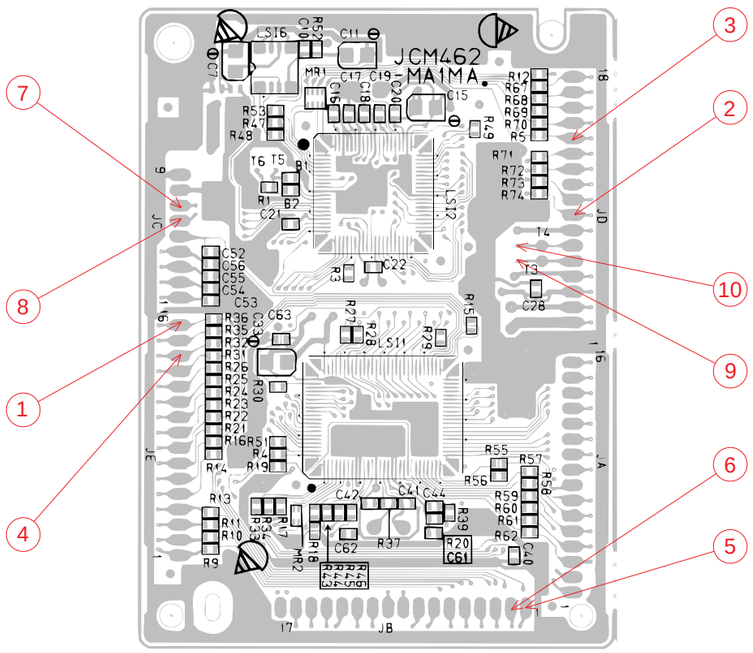
Tone : Whistle (078)
Key : A4
Touch response : Off
Reverb : Off
Volume : Maximum

Sub PCB JCM462-MA2M

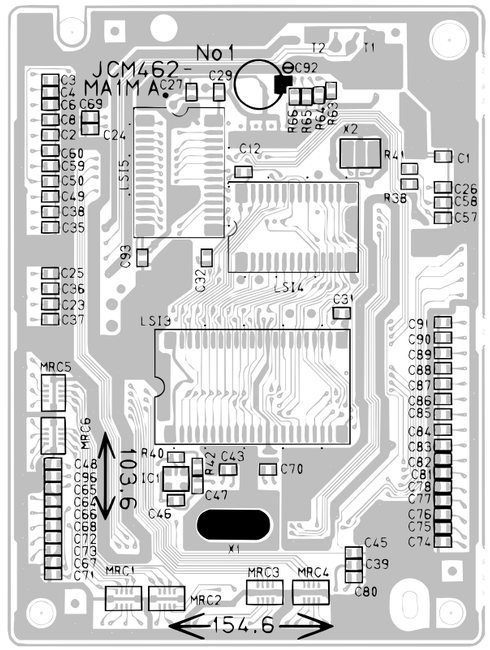


Top View

Main PCB JCM462-MA1M



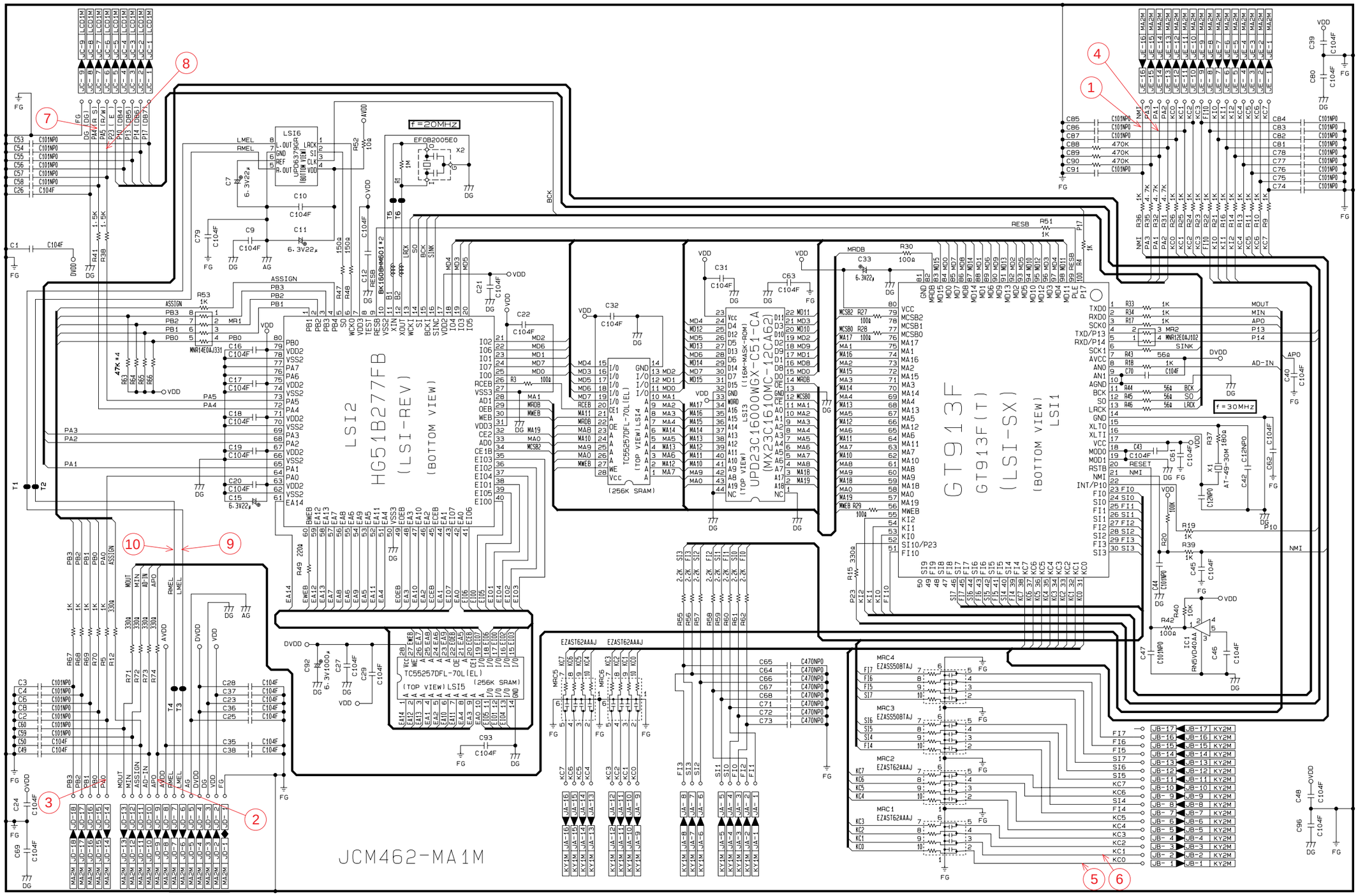
Top View



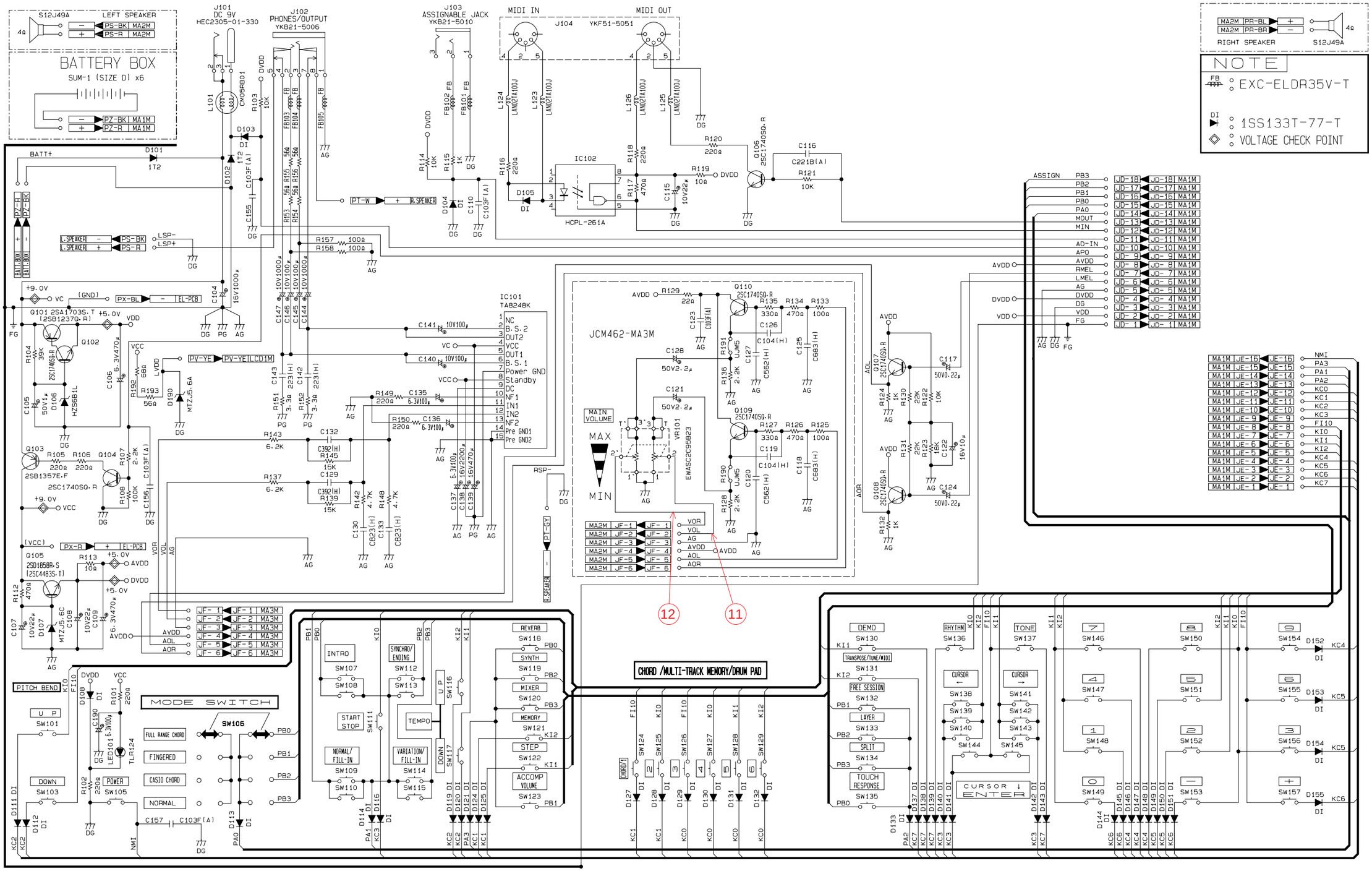
Bottom View

SCHEMATIC DIAGRAMS

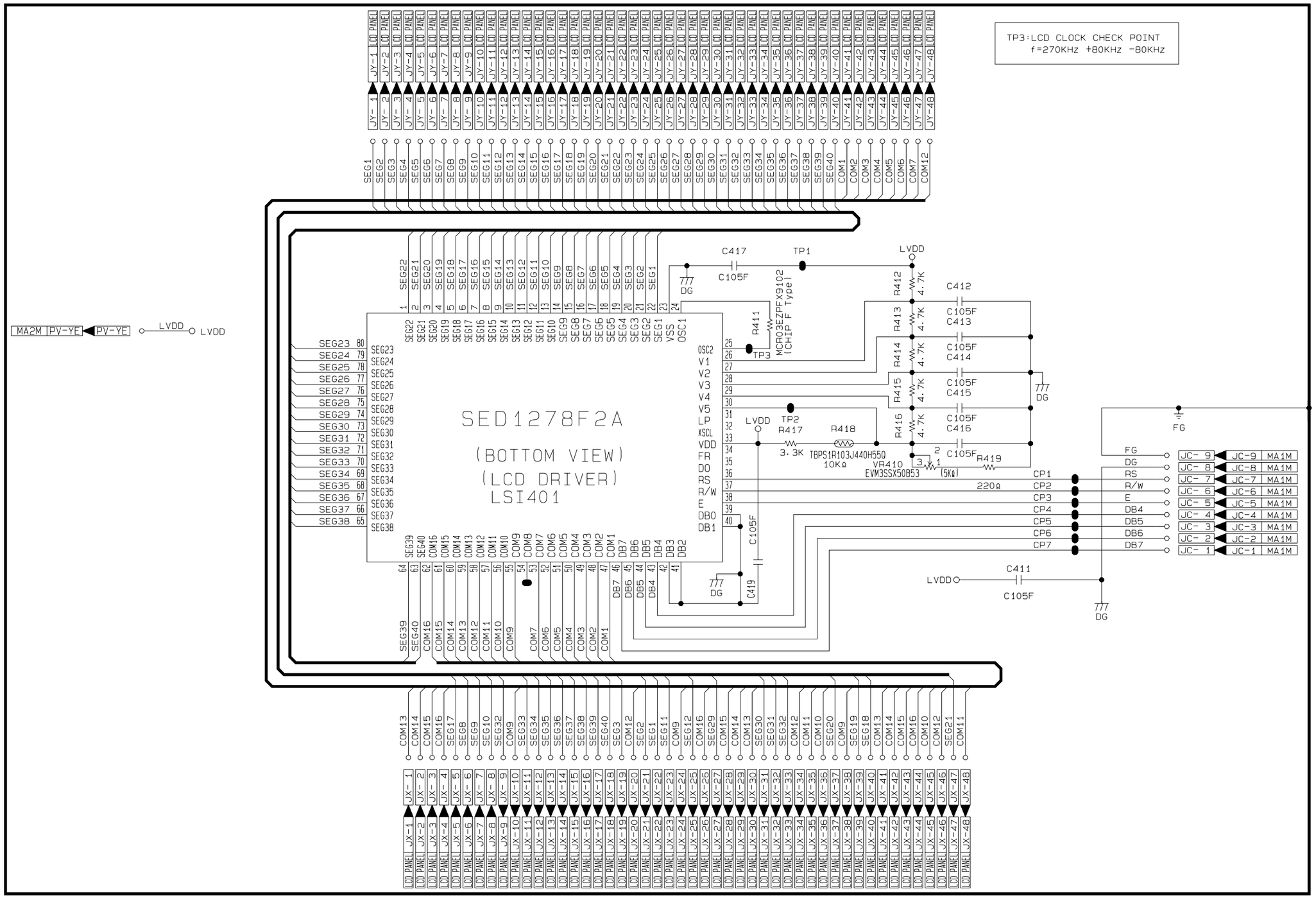
Main PCB JCM462-MA1M



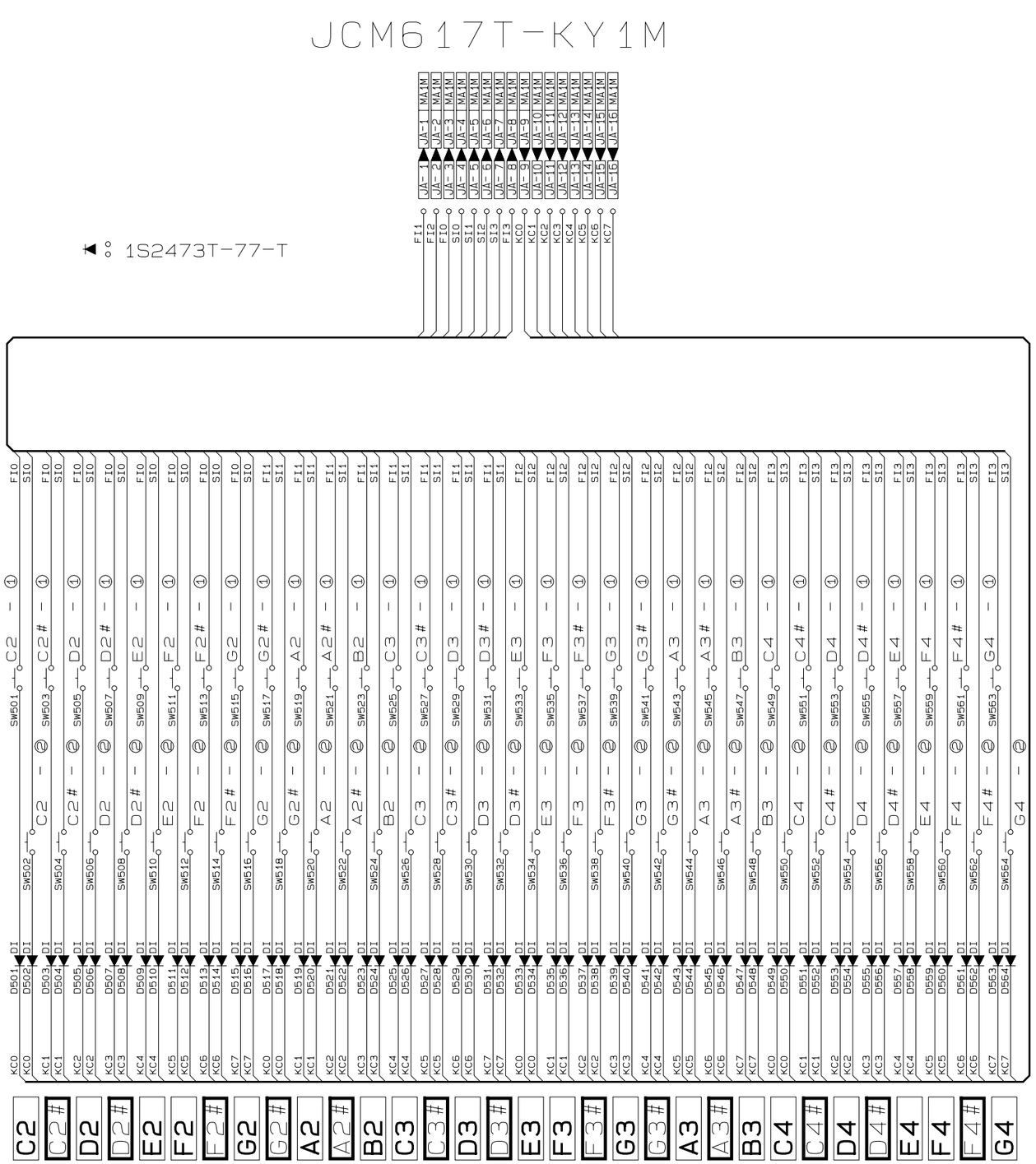
Sub PCB JCM462-MA2M/Volume PCB JCM462-MA3M

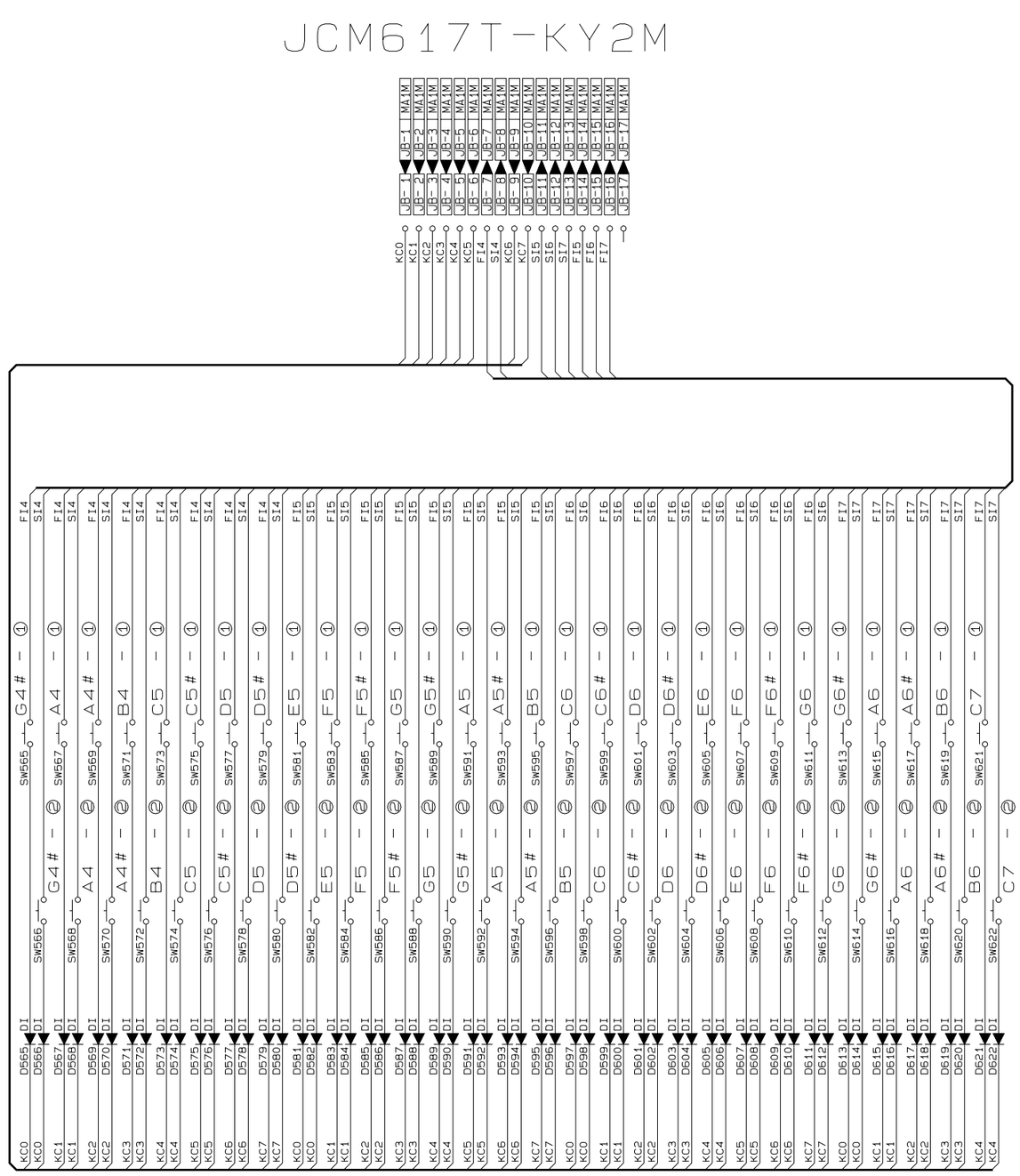


Display PCB JCM462-LCD1M



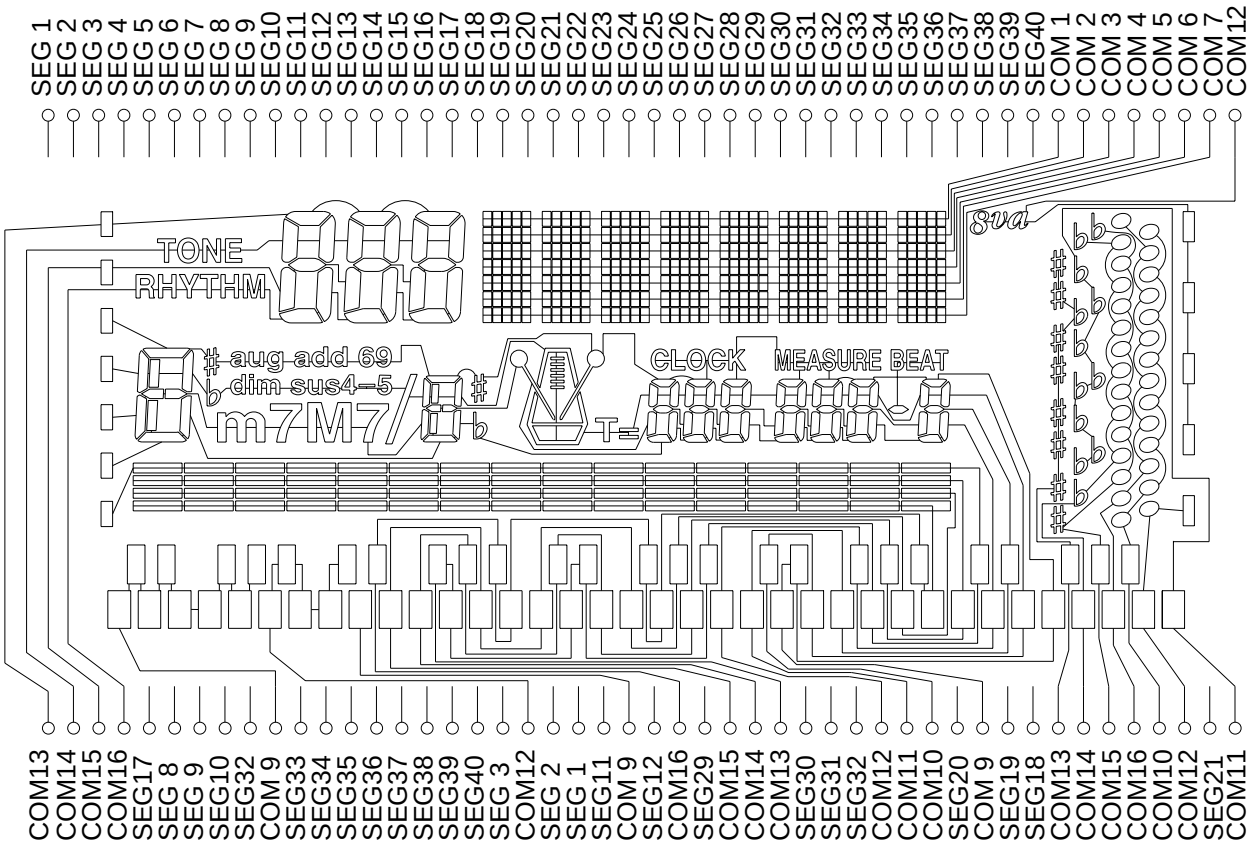
Keyboard PCBs JCM617T-KY1M/KY2M



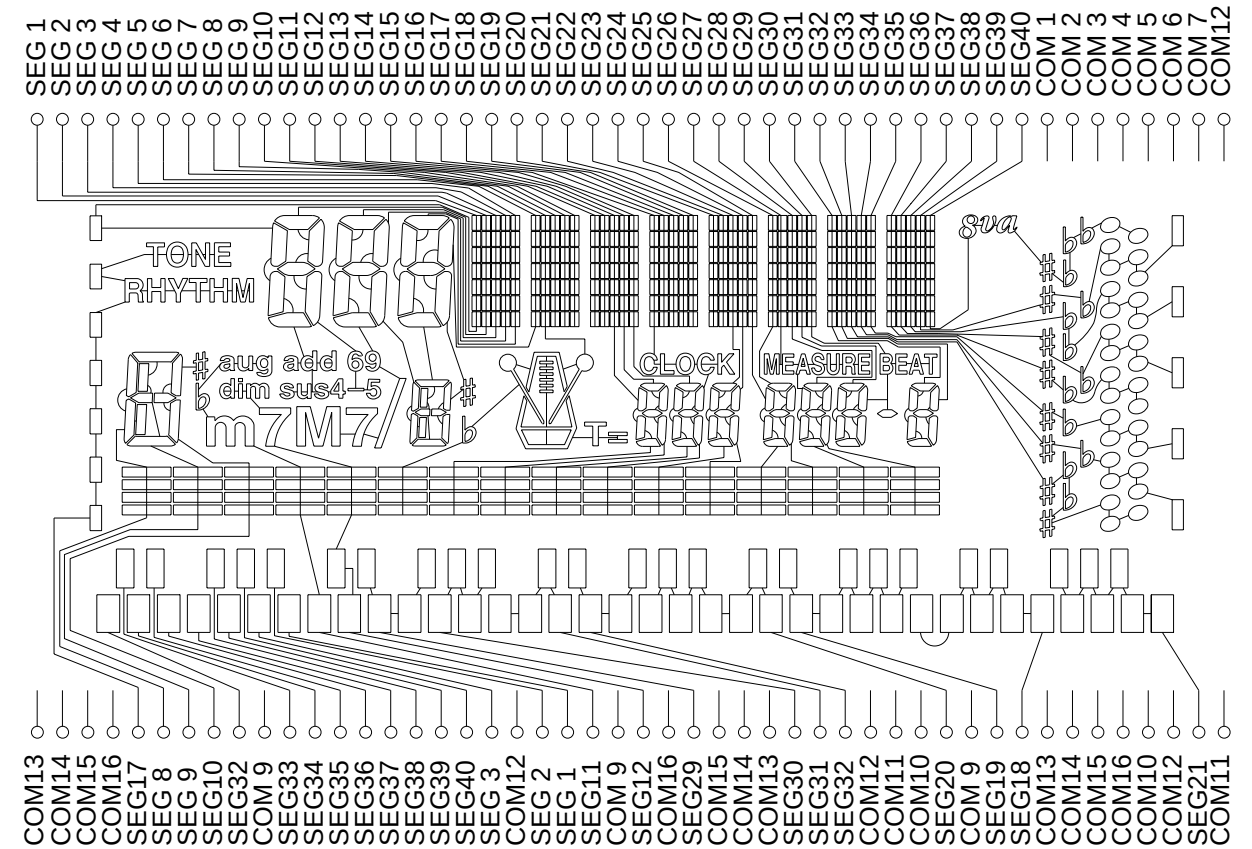


LCD

Common


SEG 1 SEG 2 SEG 3 SEG 4 SEG 5 SEG 6 SEG 7 SEG 8 SEG 9 SEG10 SEG11 SEG12 SEG13 SEG14 SEG15 SEG16 SEG17 SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32 SEG33 SEG34 SEG35 SEG36 SEG37 SEG38 SEG39 SEG40 COM 1 COM 2 COM 3 COM 4 COM 5 COM 6 COM 7 COM12
TONE
RHYTHM
aug add 69
b dim sus4–5
m7M7/
CLOCK
MEASURE
BEAT
Sva
COM13 COM14 COM15 COM16 SEG17 SEG 8 SEG 9 SEG10 SEG32 COM 9 SEG33 SEG34 SEG35 SEG36 SEG37 SEG38 SEG39 SEG40 SEG 3 COM12 SEG 2 SEG 1 SEG11 COM 9 SEG12 COM16 SEG29 COM15 COM14 COM13 SEG30 SEG31 SEG32 COM12 COM11 COM10 SEG20 COM 9 SEG19 SEG18 COM13 COM14 COM15 COM16 COM10 COM12 SEG21 COM11

Segment


SEG 1 SEG 2 SEG 3 SEG 4 SEG 5 SEG 6 SEG 7 SEG 8 SEG 9 SEG10 SEG11 SEG12 SEG13 SEG14 SEG15 SEG16 SEG17 SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32 SEG33 SEG34 SEG35 SEG36 SEG37 SEG38 SEG39 SEG40 COM 1 COM 2 COM 3 COM 4 COM 5 COM 6 COM 7 COM12
TONE
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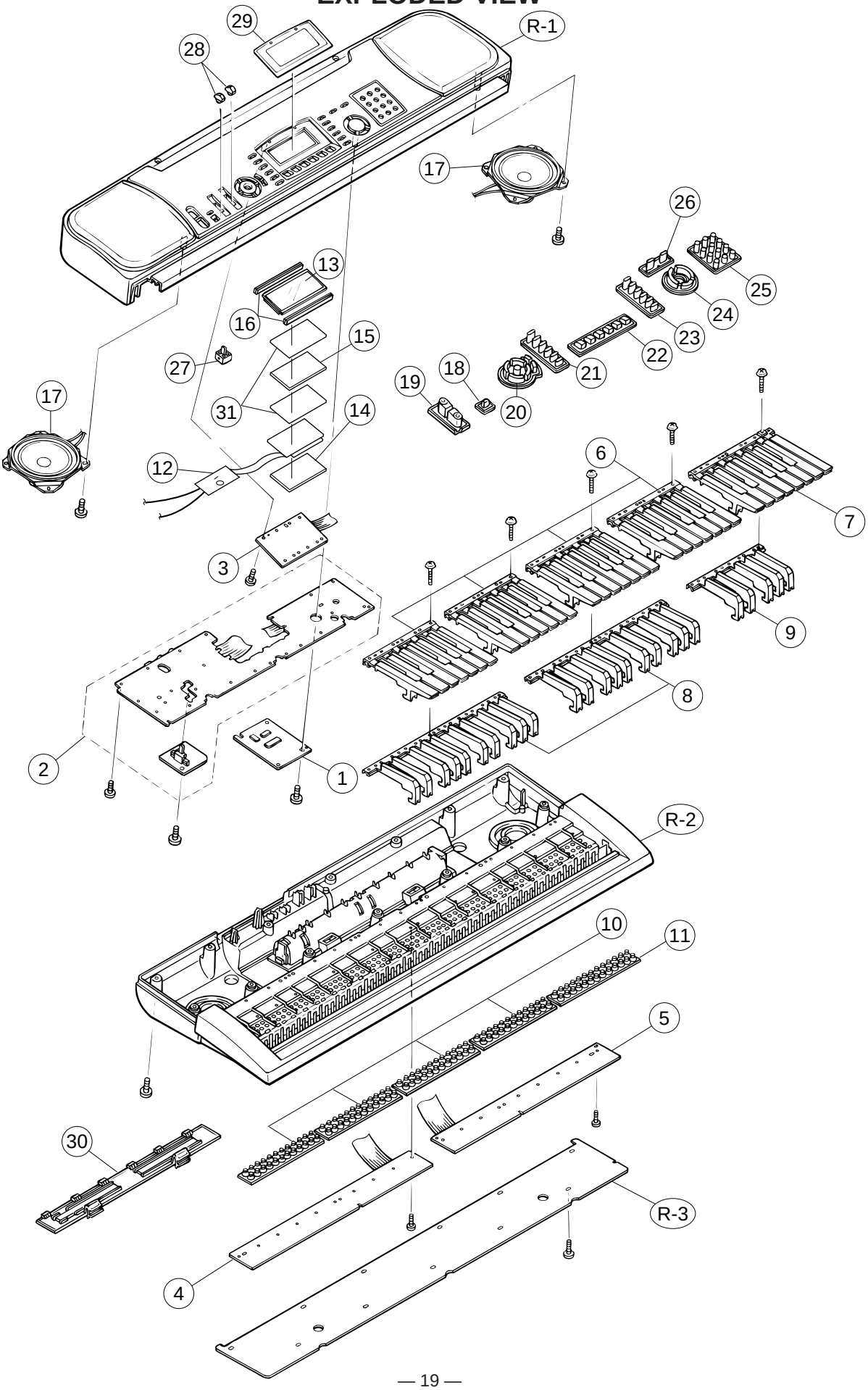
EXPLODED VIEW



PARTS LIST

CTK-611

Notes: This parts list does not include the cosmetic parts, which parts are marked with item No. "R-X" in the exploded view.
Contact our spare parts department if you need these parts for refurbish.

1. Prices and specifications are subject to change without prior notice.

2. As for spare parts order and supply, refer to the "GUIDEBOOK for Spare parts Supply", published seperately.

3. The numbers in item column correspond to the same numbers in drawing.

MC-Service

Item	Code No.	Parts Name	Specification	Q	R
	Main PCB				
1	6925 8440	PCB/ASS'Y (MA1M)	M240613*1	1	B
LSI1	2012 4879	LSI/CPU	UPD913GF-3BA(T)	1	A
LSI2	2012 2079	LSI/DSP	HG51B277FB-1	1	A
LSI3	2012 5590	LSI/ROM	UPD23C16000WGX-C51	1	A
LSI4/LSI5	2012 5572	LSI/RAM	TC55257DFL-70L(EL)	2	A
LSI6	2105 4746	LSI/DAC	UPD6379GR-E1	1	A
IC1	2012 1883	IC/MOS	RN5VD40AA-TR	1	A
MRC1,2,5,6	2845 6456	R-C NETWORK/CHIP	EZAST62AAAJ	4	C
MRC3,4	2845 6457	R-C NETWORK/CHIP	EZASS508TAJ	2	C
X1	2590 2742	OSCILLATOR/CRYSTAL	AT-49-30M	1	C
X2	2590 2699	OSCILLATOR/CERAMIC	EFOB2005E0	1	C
	Sub PCB ass'y				
2	6926 9180	PCB/ASS'Y (MA2,3M)	M140554*3	1	B
IC101	2114 5775	IC/LINEAR (POWER AMP)	TA8248K	1	A
IC102	2252 1248	IC/PHOTOCOUPLER	HCPL-261A	1	B
Q101	2250 0742	TRANSISTOR	2SA1703S,T-AN-T	1	C
	2252 0784	TRANSISTOR	2SC1740SQ,R-TP-T	7	C
Q103	2251 0672	TRANSISTOR	2SB1548-P,CS	1	1
Q105	2250 1578	TRANSISTOR	2SC4483S,T-AN	1	C
D101/D102	2390 3018	DIODE	1T2	2	C
	2390 1344	DIODE	1SS133T-77-T	40	C
D106	2360 1085	DIODE/ZENER	HZS6B1LTD-T	1	C
D107	2360 1946	DIODE/ZENER	MTZJ5.6CT-77-T	1	C
D190	2360 1673	DIODE/ZENER	MTZJ5.6AT-77-T	1	C
LED101	2320 3146	LED	TLR124	1	C
J101	3501 7049	JACK/POWER	HEC2305-01-330	1	C
J102	3612 0665	JACK/PHONE	YKB21-5006	1	C
J103	3612 0789	JACK	YKB21-5010	1	C
J104	3501 4816	JACK/DIN	YKF51-5051	1	C
VR101	2765 2178	VOLUME	EWASC2C95B23	1	C
	Display PCB				
3	6926 8350	PCB/ASS'Y (LCD1M)	M240609*2	1	B
LSI401	2012 6018	LSI/LCD DRIVER	SED1278F2A	1	A
VR401	2775 3286	POTENTIOMETER/CHIP	EVM3SSX50B53	1	C
	Keyboard PCBs				
4	6924 2580	PCB/ASS'Y (KY1M)	M140211*5	1	B
D501 - D564	2301 0101	DIODE	1S2473-T-77-T	64	X
5	6925 8490	PCB/ASS'Y (KY2M)	M140212*9	1	B
D565 - D622	2301 0101	DIODE	1S2473-T-77-T	58	X
	Keyboard unit				
6	6922 2720	KEY SET/LT WHITE	M312118*1	4	A
7	6922 2730	KEY SET/LT WHITE	M312118*2	1	A
8	6922 2740	KEY SET/10P BLACK	M111726-1	2	A
9	6922 2750	KEY SET/5P BLACK	M111726-2	1	A
10	6922 2761	RUBBER/KEY CONTACT	M211704A-1	4	C
11	6922 2771	RUBBER/KEY CONTACT	M211705A-1	1	C
	Panel unit				
12	3122 3546	MODULE/EL	YLM-102	1	B
13	3335 6724	LCD	LD-B10088E	1	B
14	6926 6971	SPACER	M440644A-1	1	C
15	6926 6991	SPACER	M440648A-1	1	C
16	6925 8590	RUBBER/INTERCONNECTOR	M440426-2	2	B

Notes: Q – Quantity per unit
R – Rank

Item	Code No.	Parts Name	Specification	Q	R
17	3831 0833	SPEAKER	S12J49A	2	B
18	6923 4980	RUBBER/BUTTON	M312122-2	1	B
19	6925 8610	RUBBER/BUTTON	M240543-1	1	B
20	6926 8280	RUBBER/BUTTON	M140516-2	1	B
21	6925 8630	RUBBER/BUTTON	M240544-1	1	B
22	6926 8290	RUBBER/BUTTON	M240544-3	1	B
23	6926 8300	RUBBER/BUTTON	M240545-2	1	B
24	6926 8310	RUBBER/BUTTON	M240546-2	1	B
25	6906 9071	RUBBER/BUTTON	M240547-2	1	B
26	6925 8680	RUBBER/BUTTON	M240548-1	1	B
27	6913 6410	SWITCH/SLIDE	CSB-12D	1	B
28	6921 5030	KNOB	M311859-1	2	B
29	6926 8320	PLATE/DISPLAY	M240568-3	1	C
30	6906 9097	COVER/BATTERY	M311164G*16	1	B
31	6926 8520	FILM	M440651-1	2	C
	Accessory				
	6906 8752	STAND/MUSIC/BAR TYPE	M340629B*2	1	B
	6926 8360	STAND/MUSIC/BOARD TYPE	M140530-2	1	B

Notes: Q – Quantity per unit
R – Rank

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